

Amendments to the Specification:

Please replace the paragraph beginning at page 14, paragraph [0040] with the following amended paragraph:

[0040] A simple method of implementing a reduced chroma QP value is to subtract a constant value from the QP value used for the Y (luminance) channel. ~~Alternatively, a separate constant value (lower than the QP value for Y) might be used for each of U and V. For example, "2" might be subtracted from the QP value for Y to yield the QP value for U, and "1" might be subtracted for the QP value for Y to yield the QP value for V. Any useful value of the amount to subtract can be used, limited only by a minimum value of "1" for the applied QP value. It is thus~~ useful to expand the range of QP in the general case. However, note that use of high precision intermediate encoding and/or decoding in conjunction with a direct correspondence between the range of QP and QP values (i.e., a value x is the same as the representation number x; thus, value 14 equals representation number 14) can result in high quality compression and decompression.

Please add the following new paragraphs after the paragraph ending at page 14, paragraph [0040]:

[0041] It is desirable to maintain the small number of steps in QP (such as 32 or 64 values, or some similar small number) if variation of QP within a frame is desired, since the bits required to code QP variations per macroblock are limited to 2 units in MPEG-4. If QP is varied only once per frame, or once per slice or similar large structure, then the number of values for QP can be large.

[0042] If needed, the effective range of QP can be extended to a wide range of determined values (i.e., the values of QP actually applied during compression and decompression) within a small number of representational codes by taking advantage of the perceptually logarithmic nature of dynamic range. Accordingly, a non-linear lookup table can be used to map a small number of representational QP codes (such as the range of 1 to 32, or 1 to 128) into a much

wider range of determined QP values (such as 1 to 128, 1 to 256, 1 to 1024, or 1 to 4096). In such a table, the low QP code entries would map nearly one-to-one to determined QP values. For example, QP codes 1 to 4 might map to determined QP output values of 1 to 4. However, the mapping will gradually become steeper, in a logarithmic model, such that QP code 8 might map to determined QP value 16, QP code 16 might map to determined QP value 64, and QP code 32 might map to determined QP value 256.

Please add the following new paragraph after the new paragraph ending at page 14, paragraph [0042], as stated above:

[0043] Alternatively, a separate constant value (lower than the QP value for Y) might be used for each of U and V. For example, "2" might be subtracted from the QP value for Y to yield the QP value for U, and "1" might be subtracted for the QP value for Y to yield the QP value for V. Any useful value of the amount to subtract can be used, limited only by a minimum value of "1" for the applied QP value.